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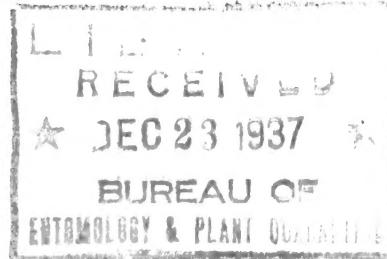
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UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Entomology and Plant Quarantine
Washington, D. C.



December 7, 1937.

The attached statement summarizes the results of the season's scouting to obtain information as to the distribution of the Japanese beetle. To it is attached, as part of the record, the trapping report by States; also comparative data where available of beetle catches in this and previous seasons.

It appears there is need only for local extension of the regulated area. In Illinois, Indiana, Missouri, North Carolina, South Carolina and Michigan where established infestations have been found previously control programs are under way which with other safeguards are believed to be adequate. Therefore no quarantine hearing will be held this year to consider extension of the area or modification of the regulations. The accompanying statement will serve the same purpose as the report usually given at quarantine hearings by making available to State quarantine officials and others the latest information as to the distribution of this insect.

LEE A. STRONG,

Chief of Bureau.

JAPANESE BEETLE CONTROL OPERATIONS DURING 1937

This season's Japanese beetle scouting was characterized by the apparent success of suppressive measures employed in St. Louis, an unusual reduction in the Chicago infestation, and the scarcity of first-record infestations of an established nature.

Unquestionably the outstanding achievement of the year - climaxing annual control programs begun in 1934 - was the reduction in the number of Japanese beetles captured in traps over an extensive area in St. Louis. Previously reported annual beetle collections in the city, starting with 1934, have totalled 1351, 1232, and last year, 88. The trapping and treating program this year was more efficiently operated and supervised than in any previous year, yet only 1 beetle could be collected. In addition to the operation of 12,557 traps throughout the city, approximately 100 man-days of manual scouting for the insect were performed with negative results. A single female beetle was trapped outside the previously-treated area in an enclosed court in the rear of a brick building and in an environment particularly unfavorable for larval survival. Nevertheless this yard and surrounding premises, to the extent of 2.7 acres, were treated with lead arsenate early in the season. State and City officials and the Works Progress Administration have cooperated with the Bureau of Entomology and Plant Quarantine in carrying out the joint control program.

As the spring and summer progressed, 111,000 traps were set in 418 cities and towns in 25 States, scattered from Florida to Vermont, and westward as far as Denver. California authorities also placed a few traps in Sacramento, Roseville, Los Angeles and vicinity. Some trapping activities were conducted in all but 16 States outside of the present quarantined area.

Southern States' Trapping

Early season trapping began on April 21 in Florida, and trap placement gradually proceeded northward as the season advanced. There were few first-records of importance discovered during this year's Southern trapping.

Trapping in non-quarantined States south of the Mason-Dixon line extended to 5 cities in Florida, 6 in Georgia, 8 in South Carolina, and 15 in North Carolina.

There were no beetles captured in any of the cities trapped in Florida.

Six beetles were trapped in Atlanta, Georgia. Since this first-record infestation is quite limited in scope, immediate control measures are not indicated. Five additional Georgia cities were trapped with negative results.

Catches in South Carolina were confined to two negligible infestations consisting of 2 beetles in Charleston and a single specimen in Greenville. Both of these captures are considerably below those of last year. The Greenville reduction may be attributed to soil treatment applied in the spring of 1936.

In North Carolina, beetles in varying numbers were caught at all but two of the 15 known-infested communities trapped. Beetles in considerable numbers were trapped in Greensboro, Spencer, East Spencer, and Winston-Salem, all of which are under a State quarantine paralleling the Federal regulations. A State inspector devotes his entire time to enforcing the regulations in these areas. Infestations varying from 1 to 13 beetles each were disclosed in Charlotte, Durham, Elizabeth City, High Point, Raleigh, Rocky Mount, Salisbury, Wilmington, and Wilson. There was very little change in the conditions of infestation in these latter cities as compared with 1936. The largest increase among them was in Charlotte, where the number of beetles caught increased from 5 to 13.

Trapping in South Central States

Trapping was repeated in Lexington and Louisville, Kentucky again this year. The 1936 catch of 1 beetle in Lexington was duplicated. Ten beetles were trapped in Louisville as compared with 2 last year. Nine of these were in a single block, with another beetle $5\frac{1}{2}$ miles distant. Traps placed in Frankfort and Newport, Kentucky failed to catch any beetles.

This year's trapping in Bristol, Tennessee, was with negative results, indicating that the insect may not have persisted in the section where 4 beetles were caught in 1936. Traps set in Chattanooga, Knoxville, and Nashville, Tennessee; Mobile, Alabama; and New Orleans, Louisiana also failed to detect any infestations.

Activities in the North Central States

Traps were set in all North Central States, except the Dakotas and Minnesota. The numbers of cities and towns surveyed in the un-quarantined States were Indiana 12, Michigan 9, Illinois 13, Wisconsin 3, Missouri 14, and 1 each in Iowa, Nebraska, and Kansas.

All trapping in Wisconsin, Nebraska, Iowa, and Kansas was with negative results.

There was a still further reduction in the Indianapolis infestation. Only 12 beetles were caught during the season, whereas previous annual catches since 1934 had been 17, 57, and 23. Early in April 1937 soil treating was completed at the Indianapolis infestations. Seven of this year's collections were caught in the treated area and the remainder were trapped at scattered points outside. Treating was recently completed in the small acreage necessary to treat as a result of current season's collections in the city.

A 1-beetle capture at Logansport was the only first-record infestation recorded in Indiana this season. Small infestations persisted at both Fort Wayne and South Bend, where 5 and 3 beetles were captured in 1936. This season the Fort Wayne traps caught 18 beetles and those in South Bend 43. Infestations in Fort Wayne were treated with lead arsenate starting October 12. 39½ acres were sprayed. Approval of a State-sponsored W.P.A. soil treating project in South Bend is pending. If approved the work will be done next spring. Eight Indiana communities were trapped with negative results.

As a result of lead arsenate applications to the Detroit, Michigan, infestation last fall and this spring, the infestation there was reduced from 128 to 67. Further soil treatments were made during October covering 39.7 acres of newly-infested area in the city. In addition, 10.9 acres surrounding the infestation of 6 beetles in Dearborn were treated. There were no other infestations determined in the State.

Control work in Chicago resulted in even a speedier proportional reduction of beetles in lead arsenate treated areas than was obtained in St. Louis. From a city-wide total of 3,740 beetles in 1936, only 384 could be recovered this year. When the heavy infestation was discovered last year near Bessemer Park in southeastern Chicago, 3,637 beetles were trapped in 72 contiguous blocks, one lone block accounting for 1,101 of these. 37 beetles were collected in 30 scattered blocks in the same area. Additional infestations disclosed last year consisted of 55 beetles in the vicinity of the Chicago Produce Terminal, 5 beetles near the freight terminals of a number of railroads, 4 in the northwestern section of the city, and two single finds in the Marquette Park section. Shortly after discovery of the heavy infestation, a State-Federal treating program was inaugurated. Field treatments extended from August 24 to November 16, 1936, while some of the treatments were completed this spring from May 6 to June 11. A total of 129 acres was treated at the regular dosage of 1,000 pounds of lead arsenate per acre. Excellent control has been obtained from the fall treatments. In the most heavily infested block in the city, the trap captures were reduced from 1,101 to 2 beetles, and there was a 93.5% reduction - from 3,674 to 242 - throughout the Bessemer Park section. Three thousand State owned traps were concentrated in this area. Intensive hand scouting was also performed in the immediate vicinity of trap finds. In the next largest infestation, where treating was begun last fall and continued this spring, the reduction was from 55 to 35. Only 14 of these were found in treated blocks, the remainder having been caught outside the infested section as determined by last year's trapping. An infestation of 23 beetles several miles southeast of Bessemer Park, and two others of 29 and 38 beetles in the northern part of the city were the most important infestations found outside sections previously known to contain the beetle. Five small infestations of a few beetles each were found scattered in the south central portion of the city. A substantial emergency State appropriation was released for further soil treatments in Chicago. Approximately 50 acres outside the previously treated areas in Chicago received lead arsenate applications this fall.

In Chicago suburban areas, first-record infestations were found at Cicero - 1 beetle, and Evanston - 20 beetles. Another beetle was collected at Elgin, for a first-record. The only other infestation in the State consisted of 3 beetles found at East St. Louis, where a few beetles have been trapped each year since 1934. In addition to the soil treatment in Chicago, 19.2 acres were covered in Evanston.

Freedom from infestation of 13 Missouri cities was indicated by the season's trapping. The lone beetle in St. Louis was the only capture in the entire State this season.

Des Moines, Iowa was also trapped with negative results. Federal traps set and tended by State employees in Denver and Pueblo, Colorado, and Sacramento and Roseville, California also failed to turn up any infestations.

Trapping in Partially Regulated States

Eighteen West Virginia communities were trapped this year, 9 of them with negative results. First-record trap collections were made in Harpers Ferry, where 77 beetles were caught, and at Phillipi, the latter yielding but a single specimen. A heavy, first-record infestation covering considerable territory was observed at Hedgeville by the Assistant State Entomologist, who supervised the trapping activities throughout the State. Trap catches indicate that beetles have persisted in negligible numbers in Charleston, Charles Town, Huntington, and Martinsburg, and Princeton. At Wheeling, 20 beetles were caught, compared with previous annual collections of 2, 8, and 11.

Rather extensive trapping was performed in Virginia this year, comprising 84 communities. Catches were made in 13 cities and towns. Other than a sizeable, established, first-record infestation at Wakefield, the only first-records uncovered in Virginia this year are limited to single-beetle-finds each at Buena Vista, South Hill, and Colonial Beach. At the George Washington Birthplace National Monument at Wakefield, a heavy, but apparently localized infestation was reported by the National Park Service. Trapping and scouting were concentrated in that area. Later, approximately 12 acres were treated by the National Park Service, under the supervision of experienced men from this Bureau. At previously-discovered Virginia infestations, catches of 68 beetles were made at Charlottesville, 31 at Pulaski, and 38 at Roanoke. Persisting infestations of fewer than 6 beetles each were found in Bon Air, Bristol, Emporia, Harrisonburg, Staunton, and Winchester. Most of the labor for trapping in previously-infested communities was supplied by the respective cities, through arrangements made by the Virginia State Entomologist. The City of Charlottesville made definite arrangements for the application early next spring of arsenate of lead to from 6 to 8 acres surrounding the principal infestations in that city.

Maryland trapping this year extended to the largest number of communities in any single State, 92 cities and towns having been included

in the survey. 73 were trapped with negative results. First-record infestations found consisted of one-beetle each at Adamstown, Edgemont, Freeland, Lisbon, Mt. Savage, North Beach, Woodensburg, and Seaside Park; 3 beetles at Kenwood Beach, and 17 beetles at Keymar. Carry-over infestations, most of them of several years' standing, were determined at Annapolis, East New Market, Hurlock, New Market, Point of Rocks, Rockville, Savage, Solomons Isle and Thurmont. The infestations at Hurlock, New Market, Point of Rocks, and Rockville have increased to such an extent that they may indicate they have become established. Three small infestations were discovered by nursery and greenhouse scouts in sections just outside the regulated area in Carroll and Talbot counties.

First-record trap finds in Ohio comprised 129 beetles in Ashtabula, 1 beetle each in Barberton, Bellaire, Cleveland Heights, and East Cleveland, and 23 beetles in Coshocton. Isolated infestations discovered in previous years and found to have persisted included 71 beetles in Akron, 1 each in Cincinnati and Conneaut, 12 in Gallipolis, 3 in Mansfield, and 10 in Wooster. At Marietta, where delayed treatments of lead arsenate were applied last spring, collections declined from 121 to 45. Thirty-eight of these were found in the treated area, and 7 in adjacent or neighboring blocks. Additional trapping in 38 other Ohio communities was with negative results.

Although New York nonregulated territory was quite extensively trapped, the only initial infestation disclosed was that of a single beetle in Fulton. Twenty-five cities were trapped with negative results. In Rochester and Watkins Glen, the infestations of previous years have increased considerably. Seventy-six beetles were caught in Rochester, and 185 at Watkins Glen. Infestations ranging from 12 to 17 beetles were located in Hornell, Niagara Falls, Oswego and Watertown.

In Pennsylvania, the Erie infestation about tripled the finds of 1936. Approximately 100 of the 149 beetles trapped there this year were taken in a block adjacent to an area included among the 19.5 acres which received chemical treatment during April of this year. Oil City, with 4 beetles, was the only initial infestation reported in the State. Sharon yielded 11 beetles, one less than last year. In Warren, however, where 15 specimens were taken last year, this year's trap catches were 129. Trapping was also carried on in 10 other northwestern Pennsylvania cities, but with negative results.

Not a single beetle was caught in Vermont, although traps were set in 25 communities throughout the nonregulated section of the State.

Quarantine Enforcement Developments

Imposition of stricter fumigation and loading requirements on the movement, from the heavily infested areas of New Jersey, Pennsylvania, Delaware, and Maryland, of refrigerator cars containing fruits and vegetables resulted in the transportation of fewer living beetles in the bunkers of these cars than last year. Examination of hundreds

of refrigerator cars upon their arrival at mid-Western terminal points from the East resulted in the finding of 32 living beetles distributed among 20 cars. Nineteen of these infested cars were from the Eastern Shores of Maryland and Virginia, and one was from southeastern Pennsylvania. During the heavy flight of 1936 transit inspectors making similar inspections recovered 97 living beetles from 70 different cars.

Continued laboratory experiments in the use of paradichlorobenzene for the fumigation of potted plants demonstrated the effectiveness of this material in the treatment for certification purposes of small azaleas of certain species and a limited number of perennials. A recently authorized treating schedule varies the dosage and time of treatment to conform to the diameter of the plant balls and the minimum temperature. This method does not require the banking of the treating soil above the plant balls or around the stems, thereby avoiding most of the injury to the cambium layer previously encountered.

Procedure for the scouting of nurseries and greenhouses classified under the Japanese beetle quarantine regulations was modified during the past summer to permit the rescouting of certain establishments located in sparsely infested sections, on which one or a few beetles had been found during previous summers' scutings. A number of establishments reverted to a preferred status of classification after periodic summer scouting had failed to disclose any infestation on or in the vicinity of the nurseries.

JAPANESE BOTTLE TRAPPING
OUTSIDE PRESENT REGULATED AREA

1929 - 1937

Location	1937	1936	1935	1934	1933	1932
	Traps	Beetles	Traps	Beetles	Traps	Beetles
MARYLAND (CONT'D)						
Shady side	10	-	10	1	-	-
Solomons Island	10	2	10	10	11	1
Taneytown	-	31	-	-	75	25
Thurmont	50	2	43	-	50	85
Union Bridge	-	15	-	-	1	1
Westernport	40	50	2	44	-	105
Woodensburg	10	1	-	-	75	186
MICHIGAN						
Dearborn	746	6	398	1	-	-
Detroit	5045	67	4686	128	792	10
MISSOURI						
St. Louis	12557	1	11562	88	10070	1232
NEW HAMPSHIRE						
Woodsville	-	100	-	-	2604	1351
NEW YORK						
Dunkirk	-	98	-	-	202	1
East Aurora	-	-	96	-	-	-
1931						
Dearborn, Mich.	200 traps	- no beetles	100 traps	- no beetles	no traps	
Detroit, Mich.	100 traps	- no beetles				
Dunkirk, N. Y.	100 traps	- no beetles				
1930						
					1929	

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Location	1937			1936			1935			1934			1933			1932		
	Traps	Beetles	Traps															
NEW YORK (CONT'D)																		
Fulton	190	1	-	-	-	-	-	-	-	191	-	-	204	-	1	-	-	-
Geneva	-	-	200	-	-	-	-	-	-	132	-	-	192	-	100	2	-	-
Goranda	-	12	-	200	2	-	-	-	-	204	2	-	144	1	144	1	-	-
Hornell	160	-	308	1	204	1	-	-	-	287	-	-	197	1	-	-	15	15
Jamesstown	800	-	195	1	-	-	-	-	-	106	-	-	196	-	89	-	-	-
Lockport	-	-	-	-	-	-	-	-	-	60	1	198	1	-	-	13	-	-
Medina	-	-	-	-	-	-	-	-	-	396	1	380	2	-	-	250	-	-
Niagara Falls	790	13	800	10	403	7	-	-	-	198	2	198	2	-	-	177	-	-
Olean	400	-	200	1	209	2	-	-	-	204	2	192	1	-	-	15	-	-
Oswego	200	17	200	2	204	-	-	-	-	396	2	396	3	-	-	110	1	-
Rochester	2400	76	1972	24	396	11	-	-	-	60	-	-	192	1	-	-	303	1
Seneca Falls	-	-	-	-	-	-	-	-	-	100	5	102	3	-	-	302	1	-
Watertown	307	14	-	6	-	-	-	-	-	96	-	-	198	-	141	-	-	-
Watkins Glen	75	185	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Westfield	50	-	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NORTH CAROLINA																		
Asheville	396	-	-	-	-	-	-	-	-	400	1	-	-	-	-	395	2	-
Aulander	-	-	400	1	-	-	-	-	-	400	5	383	4	-	-	25	1	-
Burlington	193	-	200	1	-	-	-	-	-	390	1	400	8	-	-	250	1	-
Charlotte	788	13	400	5	-	-	-	-	-	73	40	-	-	-	-	396	-	-
Durham	394	6	390	1	-	-	-	-	-	192	1	192	-	-	-	396	-	-
East Spencer	189	194	192	1	192	-	-	-	-	200	-	200	-	-	-	202	5	-
Elizabeth City	197	1	200	-	-	-	-	-	-	200	1	200	1	-	-	200	-	-
Fayetteville	-	-	-	-	-	-	-	-	-	779	15	400	13	-	-	396	-	-
Goldsboro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Greensboro	384	370	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
															1931			
Rochester, N. Y.																		
300 traps - no beetles																		
Watkins Glen, N. Y.																		
200 traps - 3 beetles																		

300 traps - no beetles
Watkins Glen, N. Y.
200 traps - 3 beetles

- 13 -

Location	1937			1936			1935			1934			1933			1932		
	Traps	Beetles	Traps															
OHIO (CONT'D)																		
Coshocton	195	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
East Cleveland	400	1	12	100	7	-	300	2	-	-	-	-	-	-	-	-	-	
Gallipolis	199	-	-	280	-	400	400	-	-	-	-	-	-	-	-	-	-	
Lancaster	-	-	-	8	7	121	200	12	-	-	-	-	-	-	-	-	-	
Mansfield	392	45	45	300	-	-	125	-	132	1	-	-	-	-	-	-	-	
Marietta	284	-	-	-	200	-	100	2	-	-	-	-	-	-	-	-	-	
Washington C. H.	198	10	10	400	-	396	1	-	-	-	-	-	-	-	-	-	-	
Wooster	193	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Zanesville	398	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
PENNSYLVANIA																		
Erie	1964	149	1593	45	1597	73	1427	-	114	167	774	282	-	-	-	-	-	
Oil City	383	4	-	-	-	-	-	-	-	-	92	-	-	-	-	-	-	
Sharon	364	11	400	12	-	-	-	-	-	-	92	-	-	-	-	-	-	
Warren	580	129	300	15	-	-	-	-	-	-	-	-	-	-	-	-	-	
SOUTH CAROLINA																		
Charleston	783	2	730	11	-	-	755	-	-	-	-	-	-	-	-	-	-	
Florence	297	-	300	-	-	-	306	-	-	-	-	-	-	-	-	-	-	
Greenville	750	1	794	33	-	-	799	-	-	-	-	-	-	-	-	-	-	
TENNESSEE																		
Bristol	151	-	-	175	4	-	-	-	-	-	-	-	-	-	-	-	-	

1931
Erie, Penna. 600 traps - 22 beetles
Charleston, S.C. 300 traps - 4 beetles

Location	Traps	Beetles												
	1937		1936		1935		1934		1933		1932		1931	
VIRGINIA														
Ashland	60	-	50	1	100	7	102	-	100	20	-	4	-	-
Bon Air	12	3	10	14	5	6	-	-	175	-	-	-	-	-
Bristol	145	2	125	1	-	-	-	-	50	-	-	-	-	-
Buena-Vista	100	1	100	-	-	-	-	-	6	400	7	-	-	-
Charlottesville	397	68	400	29	299	1	30	204	60	308	146	-	-	-
Clifton-Forge	84	-	100	1	-	-	-	-	-	-	-	-	-	-
Colonial Beach	14	1	15	-	-	-	-	-	-	-	-	-	-	-
Danville	375	-	400	2	383	4	204	-	300	-	-	-	-	-
East Highland Pk.	-	-	30	1	60	8	-	-	-	-	-	-	-	-
Emporia	32	5	30	2	60	8	-	-	-	-	-	-	-	-
Front Royal	-	-	25	-	48	-	-	-	-	-	-	-	-	-
Harrisonburg	107	1	200	2	228	2	196	1	1	61	178	2	-	-
Hopewell	200	-	200	1	180	1	40	40	40	-	-	-	-	-
Luray	-	-	25	-	40	-	-	-	-	-	-	-	-	-
Lynchburg	789	309	394	-	192	-	396	20	400	400	400	2	-	-
New Market	-	25	25	-	25	-	336	-	24	24	24	1	-	-
Orange	-	-	400	1	216	-	-	-	-	-	-	-	-	-
Petersburg	100	-	395	-	336	-	-	-	-	-	-	-	-	-
Petersburg-Pike	30	-	30	-	-	-	-	-	-	-	-	-	-	-
Pulaski	90	31	150	29	200	9	-	-	-	-	-	-	-	-
Roanoke	2	16	800	16	143	14	400	200	200	200	200	2	-	-
South Hill	20	1	15	-	143	14	-	-	-	-	-	-	-	-
Staunton	200	2	200	-	106	28	204	9	396	41	-	-	-	-
Wakefield	15	5	7119	-	192	3	192	-	225	1	135	-	-	-
Waynesboro	-	100	-	-	12	12	-	-	13	-	-	-	-	-
Winchester	300	5	301	9	96	1	8	-	114	2	186	7	-	-

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Location	1937			1936			1935			1934			1933			1932		
	Traps	Beetles	Traps															
WEST VIRGINIA																		
Berkeley Spring	-	-	-	-	-	-	353	1	35	-	-	395	-	-	-	-	-	
Charleston	403	1	18	1	37	77	4	90	2	400	2	36	-	-	-	-	400	
Charlesstown	18	-	37	-	4	-	90	-	-	400	6	36	-	-	-	-	-	
Harpers Ferry	37	-	37	-	4	-	90	-	-	400	6	36	-	-	-	-	-	
Hedgesville	4	-	4	-	4	-	90	-	-	400	6	36	-	-	-	-	-	
Huntington	796	2	796	2	400	400	400	400	2	400	8	264	3	198	396	198	7	
Martinsburg	400	5	400	5	200	-	200	-	1	200	8	264	3	198	396	198	7	
Moundsville	200	-	200	-	60	1	60	1	-	200	1	132	-	-	-	-	400	
Phillipi	60	1	60	1	60	1	60	1	-	60	1	132	-	-	-	-	400	
Princeton	100	2	100	2	776	20	776	20	67	797	11	150	6	132	2	132	2	
Wheeling	776	20	776	20	776	20	776	20	797	11	150	8	396	2	396	2	396	

1931

Wheeling, W. Va. 300 traps - no beetles

